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CONTROL OF THE SOUTHERN CORN ROOTWORM ON PEANUTS



**BUREAU OF
ENTOMOLOGY
and
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**Agricultural Research Administration
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IN RECENT YEARS peanut growers in North Carolina and Virginia have reported reduction in yields of field-cured peanuts due to the southern corn rootworm.

Damage has been most severe on heavy, poorly drained soils, where as much as four-fifths of the crop has often been lost. Fields with heavy growth of foliage show more injury than do those having poor growth. Abundant rainfall during July and August is favorable to serious injury of peanuts by this insect.

This insect has also been serious in fields where vetch or crimson clover was used as a cover crop before the peanuts were planted. Apparently these cover crops attract or aid the insect in some way. Their increased use in southeastern Virginia has increased yields of corn, cotton, and soybeans, but it has had the opposite effect on peanuts.

This insect is widely distributed over the United States east of the Rocky Mountains, but is most numerous and destructive in the southern part of its range.

Damage

Rootworm larvae bore into the pods and feed on the kernels, or peanuts, and on the more succulent tissue of the pods. Often they attack the tips of the shoots, or pegs, and kill them before they enlarge to form pods. The larvae prefer young pods, but they may infest more mature pods. The injured pods may decay from attack by soil microorganisms.



Undamaged peanuts.

Appearance and Habits

The adult of the southern corn rootworm is a beetle about 1/4 inch long. It is yellowish green with black head, legs, and antennae. There are 11 irregular black areas on the wings.

These beetles feed on the foliage and blossoms of many crops, including corn, cucumbers, beans, and soybeans. They are sometimes called spotted cucumber beetles. They winter in nearly any kind of shelter, but prefer the base of plants that are not entirely killed by the frost. They become active very early in the spring and fly about as soon as the temperature reaches 70° F.

The eggs are laid in the soil around the host plants. The slender white larva, or grub, which hatches from the egg has a brown head and a brown shield on its last segment. The small grub feeds on the underground parts of the plant, including the developing peanut



Damaged peanuts.

Pods. When it is full-fed it is about 1/2 inch long. It then makes a cell about an inch below the surface of the soil and transforms to a white pupa, from which the adult beetle later emerges.

From 4 to 6 weeks are required for the insect to develop from egg to adult. Usually there are three generations each year in southeastern Virginia.

Control with Insecticides

Control of the southern corn root-worm on peanuts can be obtained by making one application to the soil of 2 pounds of aldrin or heptachlor or 25 pounds of toxaphene per acre. The insecticides should be used in one of the following ways:

Apply a free-flowing 5-percent aldrin or heptachlor dust with a crop duster at the rate of 40 pounds per acre. Set the nozzles close to the ground and attach a canvas trailer to

prevent drift. Dust when there is little or no wind and preferably when the ground is damp.

Apply 250 pounds of 10-percent granulated toxaphene or 200 pounds of 1-percent granulated aldrin or heptachlor per acre with a fertilizer distributor or lime spreader; or apply 100 pounds of 2-percent granulated aldrin or heptachlor with fertilizer side-dressing attachments.

Apply an aldrin-fertilizer mixture with a fertilizer distributor. Such mixtures are now on the market. Follow the directions given on the bag concerning the amount to use to give the recommended dosage of insecticide.

Apply the insecticide evenly to the soil immediately before you cultivate the peanuts for the first time and not later than June 15. Adjust the equipment to give the recommended rate of application. Too much material is wasteful, and too little may not prevent crop losses. Cultivate as soon as possible after the application, in order to prevent loss in effectiveness of the insecticide.

No information is yet available on the effect of applying these chemicals as sprays to control the rootworm on peanuts.

Effect of Treatment on Yield and Quality of Crop

Peanuts harvested from areas treated with these insecticides have been much better in yield and quality than those from comparable untreated

areas. Many lots of harvested peanuts were graded, and the treated lots were often worth as much as 3 cents a pound more than the untreated lots. Yields of field-cured peanuts frequently increased as much as 40 percent in heavily infested fields. Under these conditions improved quality and greater yields increased the cash return by approximately \$100 per acre.

Off-Flavor and Insecticide Residues

No off-flavor has been reported in samples of peanuts, or peanut butter made from them, grown in soils treated with aldrin, heptachlor, or toxaphene at the recommended dosages. Tests to determine off-flavor were conducted by the Bureau of Human Nutrition and Home Economics, and the Virginia Agricultural Experiment Station.

No significant amounts of insecticide residues were found in samples of shelled peanuts grown in soils treated with these insecticides at the recommended dosages.

The scientific name of the southern corn rootworm is Diabrotica undecimpunctata howardi Barb.

PRECAUTIONS

Aldrin, heptachlor, and toxaphene are poisons. Handle them with care according to the directions on the container. Keep them off the skin and away from the eyes and nose. Wear a respirator if working in high concentrations of the dusts. After using the insecticides bathe thoroughly and change to clean clothing.

If the insecticide is accidentally swallowed, induce vomiting by giving 1 tablespoonful of salt in a glass of warm water. Repeat if necessary. Call a doctor.

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